

LISTING OF CLAIMS:

Claim 1 (currently amended): A color registration control system for a printing press having thereon a moving paper substrate, said system comprising:

an area scanner for acquiring an image of a paper substrate on a printing press; and
an image processing system adapted to receive the image and process the image to determine any color register error of the printing press, wherein said image processing system includes ~~the use of a hardware-based~~ a binary correlator implemented in hardware that operates on a plurality of pixel data values that are each a single bit, and is adapted to locate register marks on the paper substrate.

Claim 2 (original): The color registration control system as set forth in claim 1 wherein said binary correlator is implemented on an FPGA.

Claim 3 (original): The color registration control system as set forth in claim 1 wherein the area scanner is a CCD scanner.

Claims 4 (currently amended): The color registration control system as set forth in claim 1 and further including a light source generating illumination levels for said scanner ~~and wherein said image processing system further includes the use of a hardware-based histogrammer to process said illumination levels.~~

Claims 5-13 (cancelled)

Claim 14 (currently amended): A color registration control system for a printing press having thereon a moving paper substrate, said system comprising:

an area scanner for acquiring an image of a paper substrate on a printing press; and
an image processing system adapted to receive the image and process the image to determine any color register error, wherein said image processing system includes a ~~hardware-based~~ correlator adapted to locate register marks on the paper substrate and implemented substantially in hardware on at least one FPGA.

Claim 15 (currently amended): The color registration control system as set forth in claim 14 wherein said system ~~include~~ includes a binary correlator.

Claim 16 (currently amended): The color registration control system as set forth in claim 14 and further including a light source for illuminating a portion of the substrate ~~generating illumination levels, and wherein said components include a histogrammer adapted to produce a gray scale histogram of said illumination levels.~~

Claims 17-19 (cancelled)

Claim 20 (original): A color registration control system for a printing press having thereon a moving paper substrate and having a replaceable image processing subsystem, said control system comprising:

a scanner for acquiring an image of the paper substrate; and
an image processing subsystem adapted to receive the image and process the image to determine any color register error, wherein said image processing subsystem is implemented on at least one FPGA, and wherein when it is desirable to change the image processing subsystem, said at least one FPGA is suitably re-programmed.